

## ABSTRACT OF THE DISCLOSURE

A microprocessor structure for performing a discrete wavelet transform operation, said discrete wavelet transform operation comprising decomposition of an input signal comprising a vector of  $r \times k^m$  input samples,  $r$ ,  $k$  and  $m$  being non-zero positive integers, over a specified number of decomposition levels  $j$ , where  $j$  is an integer in the range 1 to  $J$ , starting from a first decomposition level and progressing to a final decomposition level, said microprocessor structure having a number of processing stages, each of said number of processing stages corresponding to a decomposition level  $j$  of the discrete wavelet transform operation and being implemented by a number of basic processing elements, the number of basic processing elements implemented in each of said processing stages decreasing by a factor of  $k$  from a decomposition level  $j$  to a decomposition level  $j+1$ .